State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

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To: CHIEF ENGINEER
PROJECT DELIVERY DIVISION CHIEFS
TRAFFIC OPERATIONS DIVISION CHIEF
MAINTENANCE DIVISION CHIEF
DES DEPUTY DIVISION CHIEFS

Date: August 30, 2013

File:

From: BARTON J. NEWTON
State Bridge Engineer
Structure Policy & Innovation
Division of Engineering Services

Subject: **ADOPTION OF *AASHTO SIGN SPECIFICATIONS, SIXTH EDITION***

Effective September 1, 2013, the *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Sixth Edition (LTS-6)* constitutes the primary California Department of Transportation design specifications for structural supports for sign structures. This memo is posted at http://www.dot.ca.gov/hq/esc/techpubs/.

The Highways Subcommittee on Bridges and Structures approved *LTS-6* in 2012. A description of major changes to Section 5, "Steel Design" and Section 11, "Fatigue Design" is in the *Foreword.* See attachment for brief summary of changes to *LTS-6.*

The Department's *Standard Plans* and *Standard Specifications* remain valid for use. If project conditions require significant deviations from these standards, the design must meet the requirements of *LTS-6.* Refer to the *Highway Design Manual*, Topic 82.5 for implementation of revised design standards for on-going projects.

Questions regarding the adoption of LTS-6 should be directed to Shannon Post, Chief, Office of Design and Technical Services at 916-227-8070.

Attachments
(1) Summary of Revisions to Sixth Edition

Summary of Revisions to Sixth Edition

LTS-5 Article	LTS-6 Article	Description
1.2, 1.4.2	1.2, 1.4.2	Minor changes.
C2.4.1.1, 2.4.1.2, and C2.4.1.2	C2.4.1.1	Some text moved to C2.4.1.1. 2.4.1.2 and C2.4.1.2 deleted. Illumination requirements.
4.8.1	4.8.1	Minor changes.
5.14.2, C5.14.2	5.14.3 and C5.14.3	Moved and major changes. Thickness of plates at tube to transverse plate connections.
5.14.3 and C5.14.3	5.14.8 and C5.14.8	Moved and minor changes.
5.15 through C5.15.3	5.15 through C5.15.3	Major changes and C5.15.1 deleted.
5.16, 5.17, and C5.17	5.16, 5.17, and C5.17	Major changes. Certain bolted connections and minimum number of anchor bolts.
5.17.5.2 and C5.17.5.2	5.17.5.2 and C5.17.5.2	Text of 5.17.5.2 deleted and major changes in C5.17.5.2. Tensioning of anchor bolts.
6.7.1 and C6.7.1	6.7.1 and C6.7.1	Major changes. Certain tubes bent about diagonal axis.
11.2	11.2	Minor changes.
11.5 through C11.6	11.5 through C11.6	Major changes. Fundamental fatigue design criteria.
11.7 and C11.7	11.7 and C11.7	Minor changes.
11.7.1 and C11.7.1	11.7.1.1 and C11.7.1.1	Moved.
11.7.2 and C11.7.2	-	Deleted. Vortex shedding load case.
11.7.3 through C11.7.4	11.7.1.2 through C11.7.1.3	Moved and minor changes.
11.9 and C11.9	11.9 and C11.9	Text deleted. New organization of load cases left 11.9 and C11.9 without code text.
12.5.1 and C12.5.1	12.5.1 and C12.5.1	Some text moved from C12.5.1 to 12.5.1
12.5.3	12.5.3	Minor changes

New items for the 6th edition:

1. Figures:
    - 3.8.3-3 through 3.8.3-5 (detailed wind speed maps for certain areas),
    - C5.14.6.1-1 and C5.14.6.1-2 (unreinforced holes and cutouts),
    - C5.14.6.2-1 (reinforced holes and cutouts),
    - C5.14.7-1 and C5.14.7-2 (mast arm to pole connections),
    - C5.15.2-1 (reinforcement of a longitudinal seam),
    - 11.7.2-1 (yearly mean wind velocity for high-mast lighting tower (HMLT) load case), and
    - C11.9.3-1 (S-N curves).
2. Articles:
    - 5.14.2 and C5.14.2 (multisided tubular sections),
    - 5.14.4 through C5.14.5 (tube to transverse plate connections),
    - 5.14.6.1 through C5.14.6.2 (holes and cutouts),
    - 5.14.7 and C5.14.7 (mast arm to pole connections),

- 5.15.4 through C5.15.5 (welds and weld inspection),
- C5.16 (certain bolted connections),
- 11.5.1 and C11.5.1 (nominal stress based fatigue design),
- 11.7.1 (fatigue loads for traffic signal and sign structures),
- 11.7.2 and C11.7.2 (fatigue loads for high-mast lighting towers), and
- 11.9.1 through 11.9.3.1 (calculating stresses and determining fatigue resistance).

3. Tables:
   - C5.14.2-1 (multisided tubular sections),
   - 5.14.3-1 (Thickness of plates at tube to transverse plate connections),
   - C5.14.5-1 (backing rings),
   - 5.15.5-1 (weld inspection),
   - 11.6.2 (fatigue importance factors for HMLT's),
   - 11.9.3.1-2 (fatigue details), and
   - 11.9.3.1-3 (fatigue stress concentration factors).
4. Appendix D, including all figures and tables (advanced methods for fatigue design of certain types of connections).

Changes to Tables for the 6th Edition:

- 3-6 (3.8.6-1) (especially Note a),
- 5-6 (C5.17.5.2-1),
- 9-1 (9.5.2-1) Note b,
- 9-2 (9.5.2-2) Note b,
- 11–1 (11.6-1),
- 11–1 (11.6-1),
- B-2 (B.2-1), and
- 11-2 and 11-3 (consolidated into 11.9.3.1-1 along with major changes to the content)

Changes to Equations for the 6th Edition:

- Equations: 5-14 (5.11.2-2) in the 2nd equation,
- 6-28 (6.4.5.1-1), and
- 8-2 (8.8.2-1).